

State of Hawaii  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
Division of Forestry and Wildlife (DOFAW)  
Honolulu, Hawaii 96813

November 1 and 2, 2016

Endangered Species Recovery Committee  
State of Hawaii  
Honolulu, Hawaii

Committee Members:

**SUBJECT:** Request for recommendations from the Endangered Species Recovery Committee on all current habitat conservation plans, safe harbor agreements, and incidental take licenses. Review and briefing from DOFAW staff: Status of the issuance of incidental take licenses for endangered, threatened, proposed, and candidate species for the period July 1, 2015 – June 30, 2016

**PURPOSE**

Act 380, Session Laws of Hawai‘i (SLH) 1997, amended the State Endangered Species Law, Chapter 195D, Hawai‘i Revised Statutes (HRS), to provide for the preparation and implementation of habitat conservation plans (HCPs) and safe harbor agreements (SHAs), and to provide additional incentives for private landowners to recover and protect threatened and endangered species on their lands. Specifically, §195D-26, HRS, requires that an annual report be prepared by the Department of Land and Natural Resources (DLNR) on:

- The effectiveness of Habitat Conservation Plans and Safe Harbor Agreements issued under §195D, HRS, and the status of all species for which incidental take licenses have been issued;
- Description of the condition of the Endangered Species Trust Fund (ESTF) established under §195D-31, HRS; and
- Recommendations to further the purposes of §195D, HRS.

Incidental Take Licenses (ITLs) are issued in conjunction with an approved HCP or SHA for the legal take<sup>1</sup> of threatened or endangered species, if such take is incidental to an otherwise lawful activity. Habitat Conservation Plans and Safe Harbor Agreements are important management tools in the State of Hawai‘i by accomplishing the following:

- Resolves conflicts between endangered species protection and legitimate use of natural resources;

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<sup>1</sup> “Take” means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect endangered or threatened species of aquatic life or wildlife, or to cut, collect, uproot, destroy, injure, or possess endangered or threatened species of aquatic life or land plants, or to attempt to engage in any such conduct (§195D-2, HRS).

- Contributes to endangered species recovery efforts through partnerships and proactive planning; and
- Provides essential ecological information for Hawai'i's resource managers by requiring a strong monitoring component in all HCPs.

This annual report is submitted to fulfill the reporting requirement for Fiscal Year (FY) 2016 and provides detailed information for 10 HCPs and five SHAs approved under the ITL program. The report is organized by HCP project type, provides an overview of SHAs, describes the condition of the Endangered Species Trust Fund, and concludes with recommendations to further the purposes of §195D, HRS.

General locations for the HCPs are shown in Figure 1.

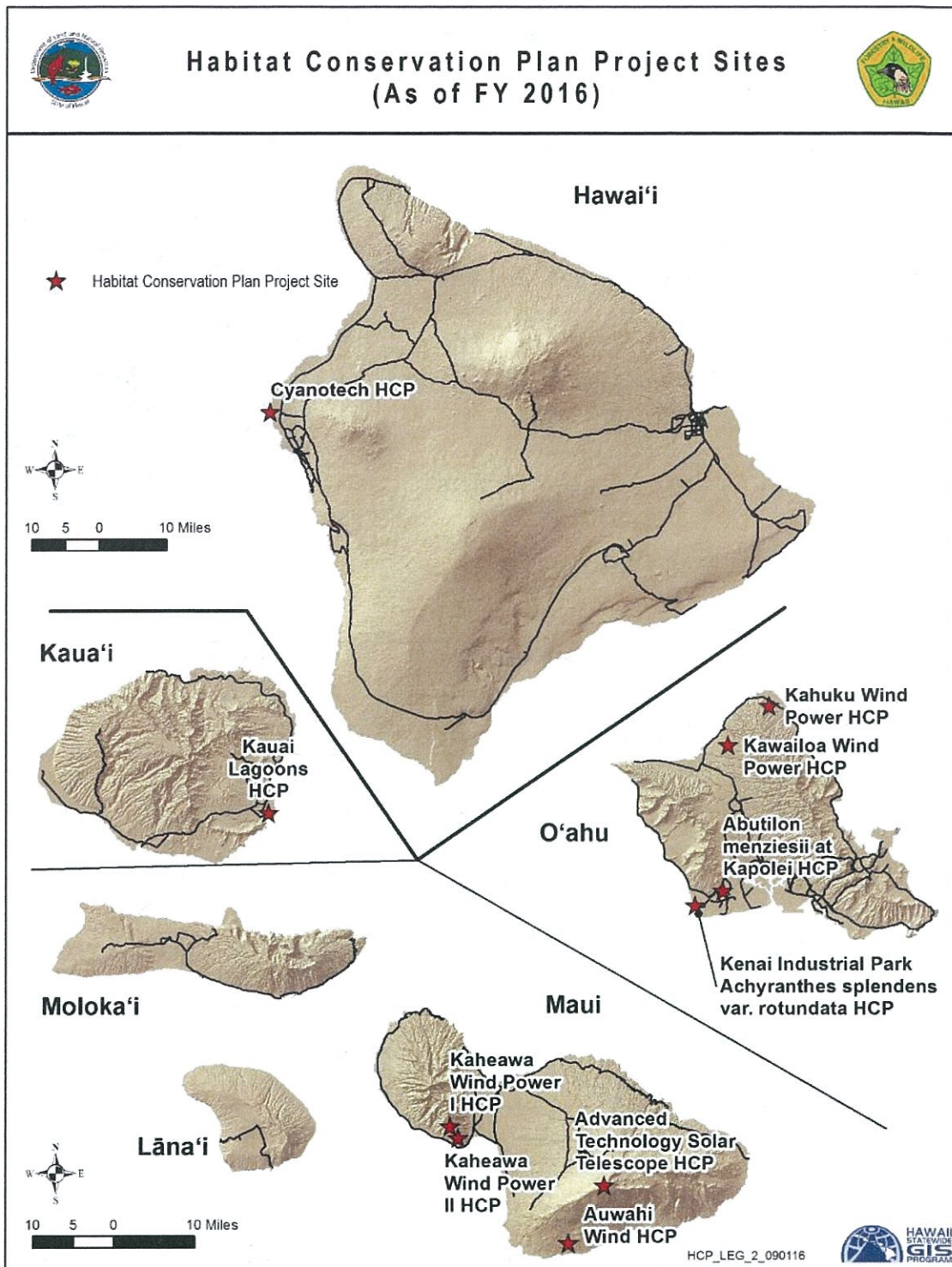


Figure 1. Habitat Conservation Plan Locations

## SUMMARY OF HABITAT CONSERVATION PLANS AND ASSOCIATED INCIDENTAL TAKE LICENSES BY PROJECT TYPE

### *Wind Energy Facilities and Structures*

#### **Kaheawa Pastures Wind Energy Generation Facility (KWP I) Habitat Conservation Plan, Maui, Hawai'i. Approved 2006.**

ITL Licensee: Kaheawa Wind Power, LLC

(Note that Terraform Power now owns KWP, LLC. Terraform Power is a yieldco subsidiary of SunEdison, Inc.)

Project: Twenty wind turbine generators (WTGs) with a total 30-megawatt (MW) energy generating capacity.

ITL Duration: January 30, 2006 – January 30, 2026

Take Authorization Over 20-year Term:



*Kaheawa Wind Power project in West Maui above Ma'alaea.*

Table 1. Take Authorization for KWP I.

Common Name	Scientific Name	Baseline Limit (Tier 1) <sup>1</sup>	Higher Limit (Tier 2) <sup>1</sup>
'Ua'u or Hawaiian Petrel	<i>Pterodroma sandwichensis</i>	25	38
'A'o or Newell's Shearwater	<i>Puffinus auricularis newelli</i>	4	8
Nēnē or Hawaiian Goose	<i>Branta sandvicensis</i>	60	n/a
'Ōpe'ape'a or Hawaiian Hoary Bat	<i>Lasiurus cinereus semotus</i>	20	50 <sup>a</sup>

<sup>1</sup>Take authorization is delineated by Baseline and Higher Limits (Tiers). Upon reaching Higher Limits additional mitigation measures or funding are triggered to ensure that mitigation keeps pace with take.

<sup>a</sup>This higher limit for the Hawaiian Hoary Bat was approved by minor amendment in 2016.

Status of ITL: Table 2 provides a listing of the HCP covered species fatalities during the reporting period.

Table 2. Documented fatalities of HCP covered species at KWP I during FY 2016 reporting period.

Common Name	Total Take
Nēnē	1

Beginning in April 2015 the downed wildlife search area was reduced relative to the previous nine years and now consists of graded roads and WTG pads found within a 70m radius circle centered on each turbine. Beginning in October 2015 canine-assisted searching was implemented, with visual searching as a secondary method.

Table 3 provides an estimate of the overall total adjusted take that has occurred since KWP I ITL issuance. Table 3b shows only the species with mortalities occurring after June 30, 2016 (the end of the State FY). In addition to the total estimated takes, accrued lost productivity from mortality of individuals due to the lag in mitigation are also evaluated and mitigated for, but are not counted against permitted take levels. Accrued lost productivity for Hawaiian Petrel and Nēnē are 7.37 and 11.42 individuals, respectively.

Table 3a. Total observed fatalities and estimated total take since ITL issuance under the KWP I ITL as of June 30, 2016.

Common Name	Total Observed Take	Estimated Unobserved Take <sup>1</sup>	Indirect Take using HCP multipliers	Total Estimated Take
Hawaiian Petrel	7	6	10	23
Nēnē	22	16	3	41
Hawaiian Hoary Bat	8	21	5	34

<sup>1</sup> Based on the 80% credible maximum using the following model: Dalthorp D., M Huso, D Dail and J Kenyon. 2014. Evidence of Absence Users Guide: U.S. Geological Survey Data Series 881.

Table 3b. Total observed fatalities and estimated total take under the KWP I ITL as of September 30, 2016 for the Hawaiian Hoary Bat.

Common Name	Total Observed Take	Estimated Unobserved Take	Indirect Take using HCP multipliers	Total Estimated Take
Hawaiian Hoary Bat	9	22	5	35

#### MBTA Species Fatalities:

Table 4. Documented fatalities of Migratory Bird Treaty Act (MBTA)-listed species and non-covered species at KWP I from July 1, 2015 to September 30, 2016.

Common Name	Total Fatalities
Black Francolin	4
Ring-Necked Pheasant	4
Gray Francolin	2
Eurasian Skylark	2
White-tailed Tropicbird	2
Nutmeg Manikin	1
House finch	1
Hawaiian Owl (Pueo)	3

#### Mitigation Status:

Nēnē baseline mitigation continued in FY 2016 at the Haleakala Ranch pen. Hawaiian Hoary Bat baseline mitigation is complete and Tier 2 mitigation is being planned.

*Hawaiian Petrel & Newell's Shearwater.*

Mitigation for the two seabird species (Hawaiian Petrel and Newell's Shearwater) is being implemented in conjunction with Kaheawa Wind Power II. The primary mitigation entails management of two constructed (approximately 4 acres) predator-free fenced enclosures (one for each species), provisioned with artificial burrows and social attraction, at the Makamaka'ole site in West Maui. Construction of both enclosures was completed on September 5, 2013.

Seabird baseline mitigation for KWPI continues at the Makamaka'ole Seabird Enclosures and currently focuses on trapping and monitoring for potential predators, maintenance of enclosure fences, erosion control and monitoring seabird activity within the Makamaka'ole Stream drainage area and near artificial burrows within the enclosures. On August 12th, 2015 game cameras captured a Hawaiian petrel entering an artificial burrow, followed by a Newell's Shearwater entrance on September 21st, 2015. Beginning in April 2016 and extending through June there has been continuous activity of both Newell's Shearwater and Bulwer's Petrel within enclosure B.

Alternative seabird mitigation site surveys began in East Maui in FY 2015 and were completed in FY 2016. Additional HAPE mitigation intended to reduce the loss of productivity accruing from HAPE take not yet mitigated for has been arranged with the FWS and Pulama Lanai and funds provided to a dedicated account with the National Fish and Wildlife Foundation (NFWF).

*Nene.* Nēnē baseline mitigation continued in FY 2016 at the Haleakala Ranch pen.

*Hawaiian Hoary Bat.* The minor modification to authorize additional bat take and the associated mitigation proposal was approved October 19, 2015 and January 20, 2016 by the FWS and DOFAW, respectively. LACI baseline mitigation is complete and Tier 2 mitigation is being planned.

Issues: 1) The Makamaka'ole fenced unit for seabird mitigation is starting to attract seabirds but success is still uncertain. Hawaiian petrel take is nearing the limit of Tier 1 therefore additional mitigation will be needed soon. 2) Nēnē mitigation is through a Safe Harbor Agreement at Haleakala Ranch which has not been finalized (however, there is an ITL in place). Finalization of the SHA is under review at FWS and the Ranch wants the baseline to be set at zero which is problematic because of all the mitigation and birds already produced and the potential loss of the pen. 3) Estimated bat take is approximately half way into Tier 2 and mitigation (research) is only now being initiated as a result of agency and ESRC deliberations as to the best mitigation approach. Depending on allocation of research projects, mitigation for Tier 2 may only cover the current estimated take of 35 bats and additional mitigation for an additional 15 bats (up to the current authorized take limit of 50) should be initiated now.

Staff Recommendations: 1) Continue monitoring the Makamaka'ole site success. Mitigation should be identified for the next tier for Hawaiian Petrel take. 2) The Haleakala Ranch SHA

must be finalized and the baseline/mitigation issue resolved. 3) The bat subcommittee should work to develop additional research and/or other mitigation projects for existing mitigation obligations.

## Kaheawa Wind Power II Wind Energy Generation Facility (KWP II) Habitat Conservation Plan, Maui, Hawai'i. Approved 2012.

ITL Licensee: Kaheawa Wind Power, LLC

(Note that Terraform Power now owns KWP II, LLC. Terraform Power is a yieldco subsidiary of SunEdison, Inc.)

Project: Fourteen WTGs with a total 21 MW energy generating capacity. Project is adjacent and downslope of KWP I.

ITL Duration: January 5, 2012 – January 30, 2032

Take Authorization Over 20-year Term:



*Kaheawa Wind Power II project in West Maui above Ma'alaea.*

Table 5. Take Authorization for KWP II.

Common Name	Scientific Name	Level of Take <sup>1</sup>	5-year Limit	20-year Limit
'Ua'u or Hawaiian Petrel	<i>Pterodroma sandwichensis</i>	Tier 1	8 adults/ juveniles & 4 chicks/eggs	19 adults/ juveniles & 9 chicks/eggs
		Tier 2	16 adults/ juveniles & 8 chicks/eggs	29 adults/ juveniles & 14 chicks/eggs
'A'o or Newell's Shearwater	<i>Puffinus auricularis newelli</i>	Tier 1	2 adults/ juveniles & 2 chicks/eggs	2 adults/ juveniles & 2 chicks/eggs
		Tier 2	5 adults/ juveniles & 3 chicks/eggs	5 adults/ juveniles & 3 chicks/eggs
Nēnē or Hawaiian Goose	<i>Branta sandvicensis</i>	Tier 1	8 adults/ juveniles & 1 fledgling	18 adults/ juveniles & 3 fledglings
		Tier 2	12 adults/ juveniles & 3 fledgling	27 adults/ juveniles & 3 fledgling
'Ōpe'ape'a or Hawaiian Hoary Bat <sup>2</sup>	<i>Lasiurus cinereus semotus</i>	Tier 1	7 bats	7 bats
		Tier 2	11 bats	11 bats

<sup>1</sup> Take authorization is delineated by Tiers. Upon reaching higher Tiers additional mitigation measures or funding are triggered to ensure that mitigation keeps pace with take.

<sup>2</sup> Minor amendment to clarify permitted bat take processed on November 26, 2014.

Status of ITL: Table 6 provides a listing of HCP covered species fatalities during the reporting period.

Table 6. Documented fatalities of HCP covered species and species of concern at KWP II during the FY 2016 reporting period.

Common Name	Total Take
Nēnē	1

The incidental take authorized includes both observed and unobserved take, including indirect take that occurs when an adult individual is taken during its respective breeding season. Table 7 provides an estimate of the overall total adjusted take that has occurred since KWP II ITL issuance. In addition to the total estimated takes, accrued lost productivity from mortality of individuals due to the lag in mitigation are also evaluated and mitigated for, but are not counted against permitted take levels. Accrued lost productivity for Nēnē is 1.46 individuals.

Beginning in July 2015 the search plot areas were reduced in size relative to the size of plot searched prior to July 2015. The reduced search area includes only roads and graded WTG pads found within a circle of radius 70m radius centered on each WTG.

Table 7. Total observed fatalities and estimated total take since ITL issuance covered under the KWP II ITL as of June 30, 2016 (note: these values still correct as of September 30, 2016).

Common Name	Total Observed Take	Estimated Unobserved Take <sup>1</sup>	Indirect Take using HCP multipliers	Total Estimated Take
Nēnē	4	4	1	9
Hawaiian Hoary Bat	3	15	1	19

<sup>1</sup> Based on the 80% credible maximum using the following model: Dalthorp D., M Huso, D Dail and J Kenyon. 2014. Evidence of Absence Users Guide: U.S. Geological Survey Data Series 881.

The total estimated take of 19 bats (with 80% statistical certainty) exceeds both the Tier 1 and Tier 2 permitted take levels for bats. KWP II is currently in discussions with DOFAW and USFWS, and has submitted an application and amended HCP to the agencies for review and approval. The amendment went before the Endangered Species Recovery Committee (ESRC) in September 2015 for initial review and input, and will be released for public comment in FY 2017.

#### MBTA Species Fatalities:

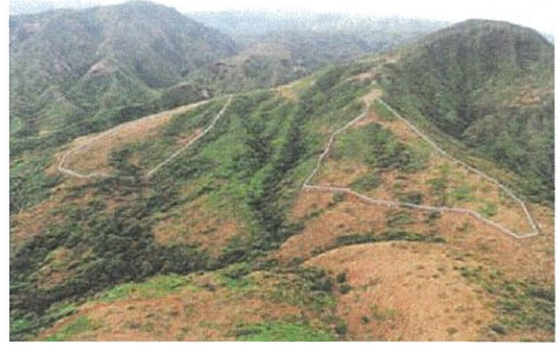
Table 8. Documented fatalities of Migratory Bird Treaty Act (MBTA)-listed species and non-covered species at KWP II from July 1, 2015 to September 30, 2016.

Common Name	Fatalities
Black Francolin	4
Gray Francolin	4
Common Myna	2
Nutmeg Mannikin	2
White-tailed Tropicbird	2
Eurasian Skylark	1
African Silverbill	1
Hawaiian Owl (Pueo)	1

#### Mitigation Status:

*Hawaiian Petrel and Newell's Shearwater.*

Mitigation for the two seabird species (Hawaiian Petrel and Newell's Shearwater) is being implemented in conjunction with Kaheawa Wind Power I. The primary mitigation entails management of two constructed (approximately 4 acres) predator-free fenced enclosures (one for each species), provisioned with artificial burrows and social attraction, at the Makamaka'ole site in West Maui.



*Enclosures A & B at the Makamaka'ole seabird mitigation site, West Maui.*

Seabird baseline mitigation for KWPII continues at the Makamaka'ole Seabird Enclosures and currently focuses on trapping and monitoring for potential predators, maintenance of enclosure fences, erosion control and monitoring seabird activity within the Makamaka'ole Stream drainage area and near artificial burrows within the enclosures. On August 12th, 2015 game cameras captured a Hawaiian petrel entering an artificial burrow, followed by a Newell's Shearwater entrance on September 21st, 2015. Beginning in April 2016 and extending through June there has been continuous activity of both Newell's Shearwater and Bulwer's Petrel within enclosure B.

Alternative seabird mitigation site surveys began in East Maui adjacent to Haleakalā National Park in FY 2015 and were completed in FY 2016. These studies deployed Wildlife Acoustics SM2BAT+™ acoustic detectors at 60 locations in approximately 8,000 hectares between 3,000-8,000 foot altitudes.

*Nēnē*. A project involving predator control traps and monitoring has been identified and funded; it is planned for implementation in FY17.

In accordance with the KWP II HCP, systematic visual observations of *Nēnē* were made at KWP II during FY 2016. Data collection of *Nēnē* activity at KWP II will continue for the life of the project through the Wildlife Education Observation Program (WEOP). In FY 2016, WEOP trainings were given to 40 individuals who were on-site regularly. A total of 265 *Nēnē* observations were reported, and showed that they are found throughout the site, but are more prevalent at higher elevation turbines (turbines 1-7).

*Hawaiian Hoary Bat*. In accordance with the KWP II HCP, baseline mitigation for the Hawaiian Hoary Bat must consist of implementation of bat habitat improvement measures on at least 338 acres. With funding provided by the ITL holder, DOFAW developed a mitigation plan for a 340 acre project area in the Kahikinui Forest Reserve (FR). Approximately 2.8 miles of fence apron was installed in July 2014 by DOFAW as part of an ungulate-proof fence to protect the Nakula

Natural Area Reserve (NAR) and the Kahikinui FR from ungulates. Inspection and maintenance of this fence is ongoing.

During the reporting period for fiscal year 2016, a total of 39 feral goats were removed from within the entire Nakula NAR and Kahikinui SFR unit. The total number of ungulates removed since October 2014 is 688 feral goats and 18 feral pigs. Currently, ungulate presence within the 2,700 acres unit is 'zero'. The out-planting work for revegetation in FY16 covered approximately 74 acres of the 340 total acres of the project area. During this period, 31,990 native plant seedlings were out-planted, making the total number of native plant seedlings out-planted within the unit at approximately 42,000 since the initial reforestation efforts began.

*Pueo.* Although the Pueo is not a listed species on Maui, KWP II included Pueo in their HCP and provided mitigation compensation in the form of \$25,000 paid to DOFAW in FY 2013 to be directed toward Pueo research efforts. DOFAW is currently developing a Pueo research plan by pooling several different funding sources. A Pueo fatality occurred at KWP II on August 17, 2016.

*Revegetation.* KWP II also has revegetation goals outlined in the HCP to mitigate for loss of native habitat as a result of project development at the wind turbine site. In FY 2016 30 native plants were outplanted at the nearby mitigation site. This brings the total number of plants outplanted at the revegetation site up to 5,263.

Issues: 1) The Makamaka'ole fenced unit for seabird mitigation is starting to attract seabirds but success is still uncertain. 2) Mitigation for Nēnē through provision of funding to DOFAW has recently begun. Mitigation is predator control. 3) The current estimated bat take of 19 exceeds the highest authorized take level of 11 bats (Tier 2). An amendment is in progress and a research project has been identified for the next tier in the amendment and will be initiated end of CY 2016.

Staff Recommendations: 1) Evaluate the applicability of the success measures at Makamaka'ole. Continue monitoring the Makamaka'ole site success. 2) Monitor the success of the predator control program for Nēnē.

### **Kahuku Wind Power Habitat Conservation Plan, O'ahu, Hawai'i. Approved 2010.**

ITL Licensee: Kahuku Wind Power, LLC

(Note that Terraform Power now owns Kahuku, LLC. Terraform Power is a yieldco subsidiary of SunEdison, Inc.)

Project: Twelve WTGs with a total 30-MW energy generating capacity.



*Kahuku facility on the North Shore of O'ahu.*

ITL Duration: June 7, 2010 – June 7, 2030

Take Authorization Over 20-year Term:

Table 9. Take Authorization for Kahuku Wind HCP.

Common Name	Scientific Name	Level of Take <sup>1</sup>	Annual Take Limit <sup>2</sup>	5-year Take Limit <sup>3</sup>	20-year Take Limit <sup>3</sup>
'Ua'u or Hawaiian Petrel	<i>Pterodroma sandwichensis</i>	Baseline	4	8 adults/ juveniles	8 adults/ juveniles
		Higher	8	12 adults/ juveniles	12 adults/ juveniles
'A'o or Newell's Shearwater	<i>Puffinus auricularis newelli</i>	Baseline	3	9 adults/ juveniles	12 adults/ juveniles
		Higher	6	12 adults/ juveniles	18 adults/ juveniles
Koloa Maoli or Hawaiian Duck	<i>Anas wyvilliana</i>	Baseline	4	12 adults/ juveniles	16 adults/ juveniles
		Higher	8	16 adults/ juveniles	24 adults/ juveniles
Ae'o or Hawaiian Stilt	<i>Himantopus mexicanus knudseni</i>	Baseline	3	9 adults/ juveniles	12 adults/ juveniles
		Higher	6	12 adults/ juveniles	18 adults/ juveniles
'Alae Ke'oke'o or Hawaiian Coot	<i>Fulica alai</i>	Baseline	3	9 adults/ juveniles	12 adults/ juveniles
		Higher	6	12 adults/ juveniles	18 adults/ juveniles
'Alae 'Ula or Hawaiian Moorhen	<i>Gallinula chloropus sandvicensis</i>	Baseline	4	10 adults/ juveniles	14 adults/ juveniles
		Higher	7	14 adults/ juveniles	20 adults/ juveniles
'Ōpe'ape'a or Hawaiian Hoary Bat	<i>Lasiurus cinereus semotus</i>	Baseline	7	18 adults/ juveniles	21 adults/ juveniles
		Higher	14	21 adults/ juveniles	32 adults/ juveniles
Pueo or Hawaiian Owl	<i>Asio flammeus sandwichensis</i>	Baseline	4	12 adults	16 adults
		Higher	8	16 adults	24 adults

<sup>1</sup>Take authorization is delineated by Baseline and Higher Limits (Tiers). Upon reaching Higher Limits additional mitigation measures or funding are triggered to ensure that mitigation keeps pace with take.

<sup>2</sup>Exceeding the Annual Take Limit (including observed and unobserved take) will require one or more of the following: adaptive management, increased mitigation, or a major ITL amendment.

<sup>3</sup>“5-Year” and “20-year” take limits are cumulative for the respective period of years.

Status of ITL: There were no fatalities of an HCP covered species at Kahuku Wind Power during FY 2016. There were no documented fatalities of species listed as threatened or endangered in Hawaii at the Kahuku Wind Power facility during the FY 2016 reporting period.

Table 10 provides an estimate of the overall total adjusted take that has occurred since Kahuku Wind ITL issuance.

Table 10. Total observed fatalities and estimated total take since ITL issuance under the Kahuku Wind Power ITL as of June 30, 2016 (note: these values still correct as of September 30, 2016).

Common Name	Total Observed Take	Estimated Unobserved Take <sup>1</sup>	Indirect Take using HCP multipliers	Total Estimated Take
Hawaiian Hoary Bat	4	9	3	16

<sup>1</sup> Based on the 80% credible maximum using the following model: Dalthorp D., M Huso, D Dail and J Kenyon. 2014. Evidence of Absence Users Guide: U.S. Geological Survey Data Series 881.

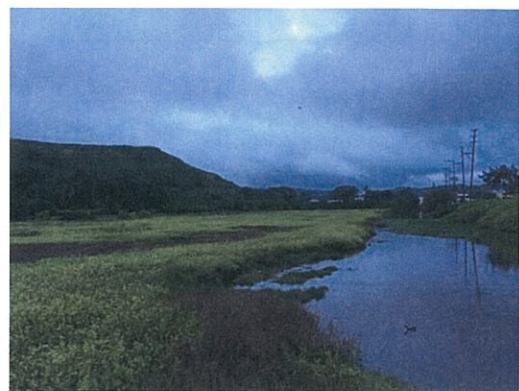
Table 11. Documented fatalities of Migratory Bird Treaty Act (MBTA)-listed species and non-covered species at Kahuku from July 1, 2015 to September 30, 2016.

Common Name	Total Fatalities
Great Frigatebird	3
Pacific Golden Plover	1
Bulwer's Petrel	1

#### Mitigation Status:

*Hawaiian Petrel & Newell's Shearwater.* In accordance with the Kahuku Wind HCP, the seabird mitigation plan for Newell's Shearwater and Hawaiian Petrel requires the ITL holder to fund seabird colony-based protection and management measures on the island of Kaua'i. Staff from the DOFAW Kaua'i Endangered Seabird Recovery Project (KESRP) identified six sites to implement Barn Owl control as a form of seabird colony protection. DOFAW began to implement work in the fourth quarter of FY 2015 at the six sites: (1) Nualolo Aina; (2) Nualolo Kai; (3) Honopu; (4) Kalaheo/Kahili; (5) Lehua Islet; and (6) the back of Hanalei Valley. It is expected that these six areas hold significant potential for shearwater conservation through barn owl-specific predator control actions.

The ITL holder funded the Kaua'i Endangered Seabird Recovery Project to deploy and then analyze data from Wildlife Acoustics SM2TM Songmeters at multiple locations in Kauai's remote mountains to survey for Newell's shearwater and Hawaiian Petrel nesting colonies. These were deployed in August 2013, April 2014, and April 2015 via helicopter and were retrieved in October 2013, August 2014, and August 2015, respectively. A report analyzing the results were submitted by Conservation Metrics, Inc. in FY16.



'Alae 'Ula or Hawaiian Moorhen swimming at Hamakua Marsh

*Hawaiian Stilt, Hawaiian Coot, Hawaiian Moorhen, and Hawaiian Duck.* Baseline mitigation for the four waterbird species covered under the ITL consisted of payments to DOFAW to conduct predator control and wetland restoration at Hamakua Marsh, part of the State's Kawainui-Hamakua Marsh Complex, for four years from FY2012-2015. Total Coot, Moorhen and Stilt fledgling production from FY2012 through FY2015 was 13, 141 and 24, respectively.

*Hawaiian Hoary Bat.* In accordance with the Kahuku Wind HCP, baseline bat mitigation consisted of a \$150,000 payment to DOFAW (procured on May 31, 2012) for preserving or enhancing foraging and/or roosting habitat by constructing an ungulate-proof fence around a roughly 280 acre section of the State Kahikinui Forest Reserve and State Nakula Natural Area Reserve. In FY 2015, approximately 2,500 meters of fence were installed to enclose the unit. Ungulates were then removed, a planting area prepared, and over 28,000 plants, including Koa, 'A'ali'i, Māmane, 'Ōhi'a, 'Iliahi, and Pilo were installed. The Kahuku mitigation funds were pooled with other funding sources to contribute to collaborative, concentrated management in the region.

In accordance with the avoidance and minimization measures described in the HCP, curtailment of all turbines up to a wind speed of 5 m/s is being implemented between sunset and sunrise from April through November.

*Pueo.* Obligations for Pueo mitigation were complete prior to FY16. These included payments of \$50,000 for Pueo research on O'ahu aimed at determining population status and management priorities. DOFAW is currently developing a Pueo research plan for O'ahu by pooling several different funding sources. Funding of \$25,000 was also provided to the Hawaii Wildlife Center.

Issues: 1) Nēnē are present on O'ahu therefore there is a small risk of take. The applicant has decided not to request an amendment to add Nēnē to their ITL. 2) Estimated bat take is nearing the Tier 1 level. 3) Pueo mitigation using the funds provided are being used by DOFAW to conduct research on Pueo. Contracting for that research by DOFAW has just begun.

Staff Recommendations: 1) Continue to monitor the Nēnē situation on O'ahu. 2) Begin identification of mitigation for the Tier 2 take of bats. 3) DOFAW to get the contracting completed and monitor progress of the Pueo research.

### **Kawailoa Wind Power Habitat Conservation Plan, O'ahu, Hawai'i. Approved 2012.**

ITL Licensee: Kawailoa Wind Power, LLC  
(Note that DESRI IV, LLC now owns Kawailoa Wind Power, LLC; it is an investment fund managed by D.E. Shaw Renewable Investments, LLC)

Project: Thirty WTGs with a total 69 MW energy generating capacity.

ITL Duration: January 6, 2012 – January 6, 2032

Take Authorization Over 20-year Term:



*Kawailoa Wind Power, O'ahu*

Table 12. Take Authorization for Kawaihoa Wind HCP.

Common Name	Scientific Name	Level of Take <sup>1</sup>	5-year Take Limit <sup>2</sup>	20-year Take Limit
'A'o or Newell's Shearwater	<i>Puffinus auricularis newelli</i>	Tier 1	3 adults/ juveniles & 2 chicks/eggs	3 adults/ juveniles & 2 chicks/eggs
		Tier 2	6 adults/ juveniles & 3 chicks/eggs	6 adults/ juveniles & 3 chicks/eggs
Koloa Maoli or Hawaiian Duck	<i>Anas wyvilliana</i>	Tier 1	4 adults/ juveniles & 4 ducklings	4 adults/ juveniles & 4 ducklings
		Tier 2	6 adults/ juveniles & 6 ducklings	6 adults/ juveniles & 6 ducklings
Ae'o or Hawaiian Stilt	<i>Himantopus mexicanus knudseni</i>	Tier 1	6 adults/ juveniles & 3 fledglings	8 adults/ juveniles & 4 fledglings
		Tier 2	8 adults/ juveniles & 4 fledglings	12 adults/ juveniles & 6 fledglings
'Alae Ke'oke'o or Hawaiian Coot	<i>Fulica alai</i>	Tier 1	6 adults/ juveniles & 3 fledglings	8 adults/ juveniles & 4 fledglings
		Tier 2	8 adults/ juveniles & 4 fledglings	12 adults/ juveniles & 6 fledglings
'Alae 'Ula or Hawaiian Moorhen	<i>Gallinula chloropus sandvicensis</i>	Tier 1	6 adults/ juveniles & 3 fledglings	8 adults/ juveniles & 4 fledglings
		Tier 2	8 adults/ juveniles & 4 fledglings	8 adults/ juveniles & 4 fledglings
'Ōpe'ape'a or Hawaiian Hoary Bat <sup>3</sup>	<i>Lasiurus cinereus semotus</i>	Tier 1	20 bats	20 bats
		Tier 2	40 bats	40 bats
		Tier 3	60 bats	60 bats
Pueo or Hawaiian Owl	<i>Asio flammeus sandwichensis</i>	Tier 1	4 adults & 4 owlets	4 adults & 4 owlets
		Tier 2	6 adults & 6 owlets	6 adults & 6 owlets

<sup>1</sup>Take authorization is delineated by Baseline and Higher Limits (Tiers). Upon reaching Higher Limits additional mitigation measures or funding are triggered to ensure that mitigation keeps pace with take.

<sup>2</sup>Exceeding the 5-year Take Limit (including observed and unobserved take) will require one or more of the following: adaptive management, increased mitigation, or a major ITL amendment.

<sup>3</sup> Minor amendment to clarify permitted bat take processed on November 26, 2014.

Status of ITL: Table 13 provides a listing of HCP covered species fatalities at the Kawaihoa Wind Power facility during FY 2016.

Table 13. Documented fatalities of HCP covered species and species of concern at Kawaihoa Wind Power during the FY 2016 reporting period.

Common Name	Total Take
Hawaiian Hoary Bat	5

Table 14 provides an estimate of the overall total adjusted take that has occurred since Kawaihoa Wind ITL issuance.

Table 14. Total observed fatalities and estimated total take since ITL issuance under the Kawaihoa Wind Power ITL as of June 30, 2016 (note: these values still correct as of September 30, 2016).

Common Name	Total Observed Take	Estimated Unobserved Take <sup>1</sup>	Indirect Take using HCP multipliers	Total Estimated Take
Hawaiian Hoary Bat	29	19	6	54

<sup>1</sup> Based on the 80% credible maximum using the following model: Dalthorp D., M Huso, D Dail and J Kenyon. 2014. Evidence of Absence Users Guide: U.S. Geological Survey Data Series 881.

With completion of three years of intensive monitoring in November 2015 and concurrence from the USFWS and DOFAW, fatality monitoring plots were reduced in size on November 1, 2015 to 35m radius circular plots. These plots are centered on the wind turbine generators (WTGs) and searched twice per week.

The total estimated take of 54 bats (with 80% statistical certainty and indirect take) exceeds both the Tier 1 and Tier 2 permitted take for bats. The ITL holder submitted a letter of intent to the agencies on July 10, 2014 stating that they would be seeking an amendment to their license, and have been in consultation with the agencies since that time. It is expected that the amendment will be submitted for review in FY17.

Table 15. Documented fatalities of Migratory Bird Treaty Act (MBTA)-listed species and non-covered species at Kawailoa up until October 2016.

Common Name	Total Fatalities
Spotted Dove	7
Common waxbill	5
Common myna	5
Gray Francolin	3
Zebra dove	3
Pacific Golden Plover	2
Nutmeg mannikin	1
Chestnut munia	1
White-tailed Tropicbird	1

#### Mitigation Status:

*Newell's Shearwater.* Tier 1 seabird mitigation was completed in FY 2015. Baseline mitigation for Newell's Shearwater as described in the HCP consists of (1) providing funding for adapting a resetting trap for use in Hawai'i, (2) field testing traps at a suitable location where predators are known to occur, and (3) supporting a one-year pilot study to provide localized predator control in an area where Newell's Shearwater are known to be breeding. Components (1) and (2) were completed and reported on in FY 2013. In FY 2014, a scope of work was developed and an MOU between SunEdison and DOFAW was signed to deploy song meters at six known Newell's colonies on Kaua'i. Seabird colony activity assessment on Kaua'i was completed for the breeding season in the first quarter of FY 2015, and a summary report was delivered in the third quarter. This assessment is part of a predator control project co-funded by Kahuku Wind Power and completes the seabird mitigation as described in the HCP for Kawailoa.

*Hawaiian Duck, Hawaiian Stilt, Hawaiian Moorhen, & Hawaiian Coot.* The 'Uko'a Wetland mitigation program for Tier 1 mitigation continued for waterbirds through FY 2016 including predator trapping and fence maintenance. In FY 2016 DESRI finalized the Conservation License to allow management of the mitigation site for the duration of the mitigation commitment. Vegetation management at 'Uko'a Wetland will be initiated in FY 2017.

*Hawaiian Hoary Bat.* The ‘Uko‘a Wetland mitigation program for Tier 1 mitigation continued for bats through FY 2016 including bat acoustic monitoring and insect assessment. In FY 2016 DESRI finalized the Conservation License to allow management of the mitigation site for the duration of the mitigation commitment. Vegetation management at ‘Uko‘a Wetland will be initiated in FY 2017. Mitigation projects to cover Tiers 2 and 3 of bat take are being identified and approval by USFWS and DOFAW is expected in FY 2017.



*Female Hawaiian Hoary Bat caught at ‘U’koa Wetland, Oahu.*

*Pueo.* A contribution of \$12,500 was made to the Hawai‘i Wildlife Center for Pueo rehabilitation in FY 2012. An additional contribution of \$12,500 required under Tier 1 mitigation is anticipated in FY17 to DOFAW for research efforts. DOFAW is currently developing a Pueo research plan by pooling several different funding sources.

Issues: 1) The current estimated bat take is 54 and the Tier 3 limit for the current permit is 60. Mitigation for Tiers 2 and 3 has now been identified as research projects and these should begin in late CY 2016. 2) Mitigation for Tier 1 bats and waterbirds has been delayed at Ukoa Pond for a number of reasons. Those issues have now been cleared and work is resuming to complete the mitigation. Work includes removal of floating pond vegetation to provide more open water, predator control and fence maintenance, and creation of “bat lanes” that may provide more foraging opportunities for bats. 2) Pueo mitigation using the funds provided are being used by DOFAW to conduct research on Pueo. Contracting for that research by DOFAW has just begun.

Staff Recommendations: 1) Monitor the progress of initiating the bat research. 2) Monitor the progress of work at Ukoa Pond. 2) DOFAW to get the contracting completed and monitor progress of the Pueo research.

### **Auwahi Wind Energy Habitat Conservation Plan, Maui, Hawai‘i. Approved 2012.**

ITL Licensee: Auwahi Wind Energy, LLC; Sempra U.S. Gas & Power

Project: Eight WTGs with a total 21-MW energy generating capacity.

ITL Duration: February 9, 2012 – February 9, 2037

Take Authorization Over 25-year Term:



*Auwahi Wind Power, Maui*

Table 16. Take Authorization for Auwahi Wind HCP.

Common Name	Scientific Name	Level of Take	25-year Limit <sup>8</sup>
‘Ua‘u or Hawaiian Petrel	<i>Pterodroma sandwichensis</i>	Tier 1	19 adults/ immatures & 7 chicks/eggs
		Tier 2	32 adults/ immatures & 12 chicks/eggs
		Tier 3	64 adults/ immatures & 23 chicks/eggs
Nēnē or Hawaiian Goose	<i>Branta sandvicensis</i>	Length of permit	5 adults/ immatures
‘Ōpe‘ape‘a or Hawaiian Hoary Bat	<i>Lasiurus cinereus semotus</i>	Tier 1	5 adults/ immatures & 2 juveniles
		Tier 2	10 adults/ immatures & 4 juveniles
		Tier 3	19 adults/ immatures & 8 juveniles
Blackburn’s Sphinx Moth	<i>Manduca blackburni</i>	Not applicable	28-acres permanently disturbed habitat is an index of take

Status of ITL: Table 17 provides a listing of HCP covered species fatalities at the Auwahi Wind Energy facility during FY 2016.

Table 17. Documented fatalities of HCP covered species and species of concern at Auwahi during the FY 2016 reporting period.

Common Name	Scientific Name	FY16 Fatalities
Hawaiian Hoary Bat	<i>Lasiurus cinereus semotus</i>	2

Table 18 provides an estimate of the overall total adjusted take that has occurred since Auwahi Wind ITL issuance. Table 18b shows only the species with mortalities occurring after June 30, 2016 (the end of the State FY).

Table 18a. Total observed fatalities since ITL issuance and estimated total adjusted take covered under the Auwahi Wind Energy ITL as of June 30, 2016.

Common Name	Total Observed Take	Estimated Unobserved Take <sup>1</sup>	Total Adjusted Take
Hawaiian Hoary Bat	7	16	23
Hawaiian Petrel	1	2	3

<sup>1</sup> Based on the 80% credible maximum using the following model: Dalthorp D., M Huso, D Dail and J Kenyon. 2014. Evidence of Absence Users Guide: U.S. Geological Survey Data Series 881.

Table 18b. Total observed fatalities and estimated total take since ITL issuance under the Auwahi ITL as of September 30, 2016 for the Hawaiian Hoary Bat.

Common Name	Total Observed Take	Total Adjusted Take
Hawaiian Hoary Bat	13	30

### MBTA Species Fatalities:

Table 19. Documented fatalities of Migratory Bird Treaty Act (MBTA)-listed species and non-covered species at Auwahi from July 1, 2015 to September 30, 2016.

Common Name	Total Fatalities
Great Frigatebird	4
Gray Francolin	4
Common Myna	2
White-tailed Tropicbird	1

### Mitigation Status:

*Hawaiian Petrel.* Mitigation for take of Hawaiian Petrels in FY 2016 consisted of continued petrel burrow monitoring at Kahikinui Forest Reserve to obtain an estimate of the number of active petrel burrows and reproductive (fledging) success. As in previous years, all monitoring protocols followed methods used by the National Park Service. New burrows located were marked, mapped, and added to the monitoring dataset. In the most recent breeding season, 64 petrel burrows were being monitored, 31 of which showed signs of consistent activity. Eight burrows successfully fledged a chick.

Auwahi Wind worked with Island Conservation and Tetra Tech to develop a predator control strategy for Kahikinui based on site-specific conditions and Island Conservation's expertise. The predator control strategy will allow predator control to be adaptively managed over time. Auwahi Wind deployed tracking tunnels to assess rat and mongoose activity across the entire management area, and then set 138 traps which were checked and baited every 2 weeks for a total of 36 weeks. Trapping resulted in the removal of 161 predators, including mice, rats, and mongoose.

*Nēnē.* Auwahi Wind provided a one-time payment of \$25,000 to the Haleakala National Park on April 17, 2012, to cover mitigation expenses for the Hawaiian Goose.

*Hawaiian Hoary Bat.* Tier 1 mitigation for the Hawaiian Hoary Bat consists of the restoration of approximately 130 acres of pastureland in the Waihou Mitigation Area (the Pu'u Makua parcel) to create roosting and foraging habitat for the Hawaiian Hoary Bat. Restoration of this area includes a completed perimeter fence, the removal of ungulates and invasive plant species, and the ongoing reforestation of native species (19 acres planted in FY 2015).

For Tier 2 mitigation, Auwahi worked with Frank Bonaccorso of the US Geological Survey (USGS) to develop a research project combining radio telemetry and acoustic monitoring to track the success of mitigation efforts at Waihou, as well as to provide more information on the ecology of the Hawaiian Hoary Bat as part of their Tier 2 mitigation requirements.

Implementation of the plan began in March 2015 with the deployment of six acoustic detectors.

Monitoring will continue for one year. A final Tier 2 & 3 research plan was submitted in cooperation with USGS and USFWS/DOFAW and approved in May 2016. Funding was allocated for implementation of the project in the first quarter of FY 2017.

Auwahi has seen a higher than expected take of Hawaiian Hoary Bats since the start of operations. For take of this listed species, Auwahi is preparing to submit a major amendment of the ITL to DOFAW and USFWS for evaluation in fall 2016.

*Blackburn's Sphinx Moth.* Baseline mitigation for Blackburn's Sphinx Moth consisted of a payment of \$144,000 to the Leeward Haleakala Watershed Restoration Partnership (LHWRP) on April 17, 2012, to restore dryland forest by planting the equivalent of 6 acres of native endangered 'Aiea (*Nothocestrum latifolium*) throughout the Auwahi Forest Restoration Project. 'Aiea is known to serve as a host plant for the endangered Blackburn's Sphinx Moth. In FY 2016 141 'Aiea were planted, bringing the total to 929 since project initiation and furthering the effort to reach the goal of 1,500.

Issues: Bat take has exceeded permitted numbers, with an unexplained increase in fatalities in FY17. Auwahi has prepared an amendment which will be submitted by the end of the year. The facility is currently shut-down for an unrelated safety concern.

Staff Recommendations: Address increased bat take. Explore additional curtailment or deterrence.

## ***Transportation Projects***

### **Relocation of *Abutilon menziesii* Habitat Conservation Plan, Kapolei, O'ahu. Approved 2004.**

ITL Licensee: Hawai'i Department of Transportation

Project: Development of 1,381-acre East Kapolei Master Plan project and construction of the North-South Road arterial highway planned to bisect the property.

ITL Duration: March 18, 2005 – July 31, 2021

Take Authorization:



*Ko'olua'ula (Abutilon menziesii),  
Island of O'ahu.*

Table 20. Take Authorization for Abutilon HCP.

Common Name	Scientific Name	Total Authorized Over ITL Duration
Ko'olua'ula	<i>Abutilon menziesii</i>	All individual plants within the 1,381-acre project area

Status of ITL: All plants have been moved. Three mitigation sites are being established and a genetic repository location contains plants with genetic representation of the plants moved. In addition a contingency reserve area has been established with additional plantings to remain until success has been confirmed at the three mitigation sites.

Mitigation Status:

The goal of the HCP is to initiate and sustain a program that will result in an overall net gain in the number of endangered *Abutilon menziesii* plants on O‘ahu. The end goal is the establishment of three wild sites that are protected self-sustaining populations of *A. menziesii* from the single degraded Kapolei population. Wild populations of *A. menziesii* have been successfully established at the following sites: 1) Diamond Head State Park; 2) Honouliuli Refuge, part of the U.S. Fish and Wildlife Service (USFWS) O‘ahu National Wildlife Refuge Complex; and Pouhala Marsh on City and County property in Waipahu. An additional wild site has been proposed in the Kahuku area on State Land to increase the likelihood of achieving success criteria at three wild sites; when approvals are obtained planting at that site will begin. An additional small population has been initiated at Ewa Villages Golf Course in close proximity to the project site that is unlikely to achieve the criteria necessary to be a wild site. In addition to these areas there is a genetic reserve site established at Koko Crater Botanical Garden with 62 plants (45% of the original genetic representation).

Until there is assurance that success criteria are met there is also maintained a Contingency Reserve Area within the 13,381-acre project area that currently has 45 mature (reproductive) *A. menziesii* plants. From an original founder population of 93 plants on the project site in 2002, outplanting efforts have resulted in establishment of 228 mature *A. menziesii* plants at targeted wild sites plus 77 plants at Ewa Villages planting, 84 plants at Koko Crater, and the 72 plants in the CRA. A DOFAW Horticulturist/Botanist is working to ensure successful natural regeneration of outplanted individuals. Current monitoring data indicate that a total of 141 seedlings from outplanted individuals are currently present (all are at 2 of the wild sites). The goal in the next fiscal year is to establish a successful wild site at Kahuku and increase the survival of seedlings from natural generation through management efforts.

Issues: 1) The long-term success of the mitigation at three wild sites as required in the HCP. 2) The status of the Contingency Reserve Area (CRA) and the criteria that would allow it to be taken (removed); also the recent request by DHHL to designate a specific 18-acre parcel for the CRA (note that the current fenced site is approximately 26 acres) as part of a 2013 request from the Land Division to transfer a larger parcel of land to DHHL, as approved by the BLNR.

Staff Recommendations: 1) Review the potential to achieve success at three wild sites – if it is possible and if not what should be the alternative goal(s). 2) Preliminary options for the designation of the (minimum) 18 acres for the CRA have been submitted by DHHL to staff and a

response a response to DHHL will need to be developed. An overall long-term strategy for this newly delineated CRA boundary should also be developed.

### ***Other Development Projects***

#### **Cyanotech Aquaculture Facility Habitat Conservation Plan, Keahole Point, Hawai'i. Approved 2003.**

ITL Licensee: Cyanotech Corporation

Project: Commercial microalgae farming operation.

ITL Duration: Original Endangered Species Permit: April 2002 (short term); Subsequent ITL December 24, 2003 – March 17, 2016; Renewal application for 2016-2035 in Process

Take Authorization Over 13-year Term:

Table 21. Take Authorization for Cyanotech HCP.

Permit Period	Common Name	Scientific Name	Total Authorized Over ITL Duration
2002-2016	Ae'o or Hawaiian Stilt	<i>Himantopus mexicanus knudseni</i>	The greater of, 45, or the number of chicks produced to offset losses <sup>1</sup>
2016-2035* (requested renewal )	Ae'o or Hawaiian Stilt	<i>Himantopus mexicanus knudseni</i>	38 (requested)

\*not yet approved

Status of ITL: Table 22 provides a listing of all documented wildlife fatalities during the reporting period.

Table 22. Documented wildlife fatalities at the Cyanotech Aquaculture Facility during the FY 2016 reporting period.

Common Name	Take Observed during FY 2016
Hawaiian Stilt	0

In accordance with the Cyanotech HCP, surveys for incidental take are conducted twice per week during the nesting season and once per week during the non-nesting season. Monitoring for injured wildlife is conducted daily as part of normal operations of the production raceways. Monitoring documented three nests with 11 eggs total and no hatchlings at the facility during the reporting period.

Table 23 provides an estimate of the overall total adjusted take that has occurred since Cyanotech ITL issuance.

Table 23. Total observed fatalities since ITL issuance and estimated total adjusted take covered under the Cyanotech ITL as of June 30, 2016.

Common Name	Total Observed Take	Total Adjusted Take <sup>1</sup>
Hawaiian Stilt	18 adults, 4 chicks	43 fledglings

<sup>1</sup> Total adjusted take represented as number of fledglings, based on the survival rate of 2.17 fledglings with respect to incidental take of adult as described in the 2006 Cyanotech Amendment.

#### Mitigation Status:

*Hawaiian Stilt.* Prior to the HCP, mitigation occurred onsite at a lake that was managed as nesting and foraging habitat for stilts. Concerns about the proximity to the airport led to the onsite mitigation site being closed in 2002, with hazing implemented to discourage further nesting. Prior to being shut down, the on-site lake resulted in 237 fledglings. 48 of those fledged in 2002 and were “credited” to the HCP for the first year of permit coverage. According to a 2006 minor amendment, Cyanotech mitigation was to be satisfied by funding and implementing predator control at an off-site location. ‘Opae‘ula (now Kapo‘ikai) pond is a 3.24 hectare coastal wetland located in the North Kona district of Hawai‘i Island and was identified as a viable location for predator control efforts. Cyanotech worked with the private landowner to fund predator control efforts at ‘Opae‘ula pond to meet mitigation obligations to satisfy the HCP.

**Renewal:** In June 2016, Cyanotech requested a renewal for permit and HCP, with a requested take of 38 Hawaiian Stilts for the next 19 years (2016-2035). Cyanotech is required to propose a suitable potential mitigation project within one year of approval.

Cyanotech will also continue funding the annual Kona Waterbird Survey for the duration of the requested permit term (2016-2035).

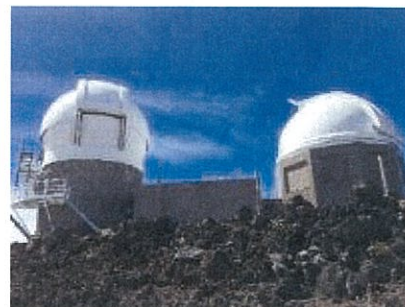
Issues: Cyanotech has not identified a suitable mitigation project, which must be approved before the renewal of the ITL and HCP can be finalized.

Staff Recommendations: Agency staff have conducted site visits to the region and are working to identify a suitable project.

#### **Daniel K. Inouye Solar Telescope (formerly the Advanced Technology Solar Telescope) Construction Habitat Conservation Plan, Halekalā High Altitude Observatory Site, Maui, Hawai‘i. Approved 2011.**

ITL Licensee: National Science Foundation

Project: Construction of the Daniel K. Inouye Solar Telescope (DKIST) within the 18-acre University of Hawai‘i Institute for Astronomy Haleakalā High Altitude Observatory site at the summit of Haleakalā.



*DKIST Facility on Haleakalā summit.*

ITL Duration: December 1, 2011 – December 1, 2021

Take Authorization Over 10-year Term:

Table 24. Take Authorization for the DKIST HCP.

Common Name	Scientific Name	Total Authorized Over ITL Duration
‘Ua‘u or Hawaiian Petrel	<i>Pterodroma sandwichensis</i>	30 fledglings and 5 adults

Status of ITL: No petrel collisions have been recorded during monitoring from 2011 to June 30, 2016.

Table 25. Documented wildlife fatalities at the DKIST facility during the FY 2016 reporting period.

Common Name	Take Observed during FY 2016
‘Ua‘u or Hawaiian Petrel	0

Birdstrike monitoring has occurred annually during seabird nesting season, February 1 to November 30, since 2011. In accordance with the HCP, areas around the two Federal Aviation Administration (FAA) towers, the telescope construction site, and the conservation fence are monitored. No collision events associated with the towers or conservation fence have been detected since birdstrike monitoring began in 2011. Noise and vibration monitoring is also conducted to determine if the burrows nearest the construction site are impacted by construction activities. No construction activity to date has produced vibrations meeting or exceeding the threshold of 0.12 in/sec established in the HCP, and noise levels at burrow entrances have averaged 56 dBA which is usually not above ambient wind noise levels. Most external construction was completed as of early March of 2016, and therefore, as of March 7, 2016 construction noise and vibration monitoring was not measured at the DKIST site except during large, noisy, or earth-moving operations.

Table 26a. Total attributed fatalities since ITL issuance and estimated total adjusted take covered under the DKIST ITL as of June 30, 2016.

Common Name	Total Observed Take
‘Ua‘u or Hawaiian Petrel	0

Table 26b. Total observed fatalities take since ITL issuance under the DKIST ITL as of September 30, 2016.

Common Name	Total Observed Take
‘Ua‘u or Hawaiian petrel	1

Mitigation Status:

*Hawaiian Petrel.* In accordance with the HCP, DKIST constructed a 4.23 km ungulate-proof fence enclosing a 313 acre Conservation Area adjacent to Haleakalā National Park. As a result of the fence construction process and the intensive monitoring activities that were being implemented during the fence construction, all ungulates left the area before the fence was

completed in November 2013. Based on footage from camera traps, no ungulates have been detected within the Conservation Area since September 12th, 2013.

Predator control has been ongoing since September 2012 using A-24 automatic traps (targeting mongoose) and Havahart traps (targeting cats). In June 2014 the traps were rearranged to a more unified grid pattern, and supplemented with additional traps to cover the entirety of the Conservation Area. Traps are baited during Petrel season (February-November) each year. No predators were caught in FY 2016. Rodenticide bait stations are utilized near buildings.

The 2016 Petrel season is ongoing. The 2015 season noted 168 active burrows in the conservation area, with 29 of those burrows successfully producing a fledgling.

Issues: The control site has not produced enough birds to provide a measure of success or variability. The production at the conservation site has been quite variable, making it difficult to determine net benefit. The numerous egg losses in 2015 are unexplained. The rollouts do not seem to correspond to a similar increase observed elsewhere, but also are not linked to measured ground disturbance or vibration at the site.

Staff Recommendations: Continue to explore new methods for determining benefit. Work with managers of petrels (National Park Service, Maui Nui Seabirds, Auwahi, etc) to examine all data available for birds on the whole mountain to see if the trends at this site are in line with those nearby. As per the HCP, mitigation can end 6 years after completion of the fence provided net benefit has been met. A new steward for the site should be identified so that predator control and monitoring can continue if the DKIST obligation ends November 2019.

### **Kaua'i Lagoons Habitat Conservation Plan, Kaua'i, Hawai'i. Approved 2012.**

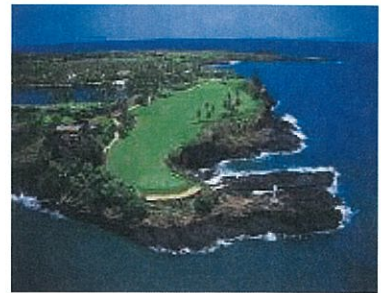
ITL Licensee: Kaua'i Lagoons, LLC

(Note that Tower Kaua'i Lagoons, LLC is the current name of the entity now holding the license)

Project: Oceanfront resort encompassing approximately 600 acres.

ITL Duration: April 11, 2012 – April 11, 2042

Take Authorization Over 30-year Term:



*Kaua'i Lagoons, Kaua'i.*

Table 27. Take Authorization for Kaua‘i Lagoons HCP.

Common Name	Scientific Name	Type of Take	Total Authorized Over ITL Duration
‘A‘o or Newell’s Shearwater	<i>Puffinus auricularis newelli</i>	Life of permit	29 <sup>a</sup>
Koloa Maoli or Hawaiian Duck	<i>Anas wyvilliana</i>	Mortality or Non-Lethal	36
Ae‘o or Hawaiian Stilt	<i>Himantopus mexicanus knudseni</i>	Mortality or Non-Lethal	38
‘Alae Ke‘oke‘o or Hawaiian Coot	<i>Fulica alai</i>	Mortality	110
		Non-Lethal	180
‘Alae ‘Ula or Hawaiian Moorhen	<i>Gallinula chloropus sandvicensis</i>	Mortality	40
		Non-Lethal	30
Nēnē or Hawaiian Goose	<i>Branta sandvicensis</i>	Mortality or Non-Lethal	17
‘Ua‘u or Hawaiian Petrel	<i>Pterodroma sandwichensis</i>	Life of Permit	1
‘Akē‘akē or Band-rumped Storm Petrel	<i>Oceanodroma castro</i>	Life of Permit	1

<sup>a</sup> Authorized level of take changed from 27 to 29 as processed under the September 2013 Minor Amendment

Status of ITL: Table 28 provides a listing of all documented incidental take during the reporting period.

Table 28. Documented incidental take of Covered Species at the Kaua‘i Lagoons site during the FY 2016 reporting period.

Common Name	Take Observed during FY 2016
Hawaiian Moorhen	3
Hawaiian Coot	6
Hawaiian Duck	1

Table 29 provides the observed mortalities that have occurred since Kaua‘i Lagoons ITL issuance. Table 29b shows only the species with mortalities occurring after June 30, 2016 (the end of the State FY).

Table 29a. Total observed incidental take since ITL issuance under the Kaua‘i Lagoons ITL as of June 30, 2016.

Common Name	Total Observed Take	Total with Adjusted Take
Newell’s Shearwater	2	2
Nēnē	2	2.72
Hawaiian Moorhen	7	5.650
Hawaiian Duck	2	1
Hawaiian Stilt	0	0
Hawaiian Coot	11	11.675

Table 29b. Total observed incidental take since ITL issuance under the Kaua‘i Lagoons ITL as of September 30, 2016 for the Hawaiian Duck.

Common Name	Total Observed Take
Hawaiian Duck	3

In accordance with the Kaua‘i Lagoons HCP, the Kaua‘i Lagoons Resort (Resort) continued to implement the following minimization measures during this reporting period:

- On-site predator control;
- Comprehensive endangered species awareness training to all Resort employees;
- Deployment of construction monitors and biological monitors during construction operations to prevent harm to ITL covered species;
- Education program to inform golfers of the presence of endangered species and implement measures to avoid harm to such species while golfing; and
- Program to minimize light-induced attraction of seabirds to Resort facilities by installing appropriate lighting fixtures, and implementing appropriate seasonal restrictions and practices.

The total number of Nēnē at Kaua‘i Lagoons during the span of the nesting season was estimated at 27. Nēnē monitoring was conducted. Some egg production occurred at 4 of 5 nests. From these nests 10 of 15 eggs hatched and resulted in the production of 7 goslings.

During the year, 7 Nēnē from Kaua‘i Lagoons were relocated to Maui and 5 were relocated to Big Island. There were a remaining 7 Nēnē that tested positive for avian malaria and were released back on Kaua‘i.

#### Mitigation Status:

*Nēnē, Hawaiian Stilt, Hawaiian Coot, Hawaiian Moorhen, & Hawaiian Duck.* Baseline mitigation for waterbirds consists of providing and maintaining approximately 35 acres of lagoons on the property that are an important habitat for endangered waterbird species, including predator control trapping and wildlife monitoring. Predator control efforts during this reporting period resulted in 106 cattle egrets, 16 cats, and 1,695 chickens removed from the property. Kaua‘i Lagoons also contributed mitigation funding of \$85,000 to DOFAW in May 2012 to be used to conduct predator control and/or manage Nēnē at a translocation site(s) after the completion of the State’s five-year translocation project ending in 2016.

*Newell’s Shearwater, Hawaiian Petrel, & Band-rumped Storm Petrel.* The Minor Amendment of 2013 increasing Newell’s Shearwater take specified contribution of mitigation funding for seabird take, in the amount of \$10,000 annually, to the National Fish and Wildlife Foundation account, to be held until such time as a Kaua‘i seabird island-wide HCP (currently in the planning stages) is finalized and approved.

Issues: 1) The annual report for this site has not been provided in the State Fiscal Year format as required.

Staff Recommendations: 1) Have the Annual report revised to fit the State FY.

# **Relocation of Round-leaved Chaff Flower (*Achyranthes splendens* var. *rotundata*) Habitat Conservation Plan, Kenai Industrial Park, Kapolei, O‘ahu, Hawai‘i. Approved 2014**

ITL Licensee: CIRI Land Development Company (In September 2014 CIRI Land Development Company sold the property under the ITL to AKC Leasing Corporation)

Project: Industrial development on a 0.75-acre parcel

ITL Duration: February 10, 2014 – February 9, 2024



*Achyranthes splendens* var. *rotundata*.

Take Authorization Over 10-year Term:

Table 31. Take Authorization for Kenai Industrial Park.

Common Name	Scientific Name	Total Authorized Over ITL Duration
Round-leaved Chaff Flower	<i>Achyranthes splendens</i> var. <i>rotundata</i>	3 individuals and their seed bank

Status of ITL: All plants at the site were removed under supervision of the State botanist. Approximately 23,000 seeds were collected in 2014. Roughly 400 of the seeds collected were used to germinate plants at Hui Ku Maoli Ola native plant nursery, the remainder are in storage at the Lyon seed facilities. The seeds at Hui Ku Maoli Ola were propagated and were used for outplanting at the mitigation site.

Mitigation Status:

*Round-leaved Chaff Flower.* In accordance with the HCP, seeds were collected from the project site and were either stored or propagated for future out-planting at the mitigation site located at the Kalaeloa Unit of the Pearl Harbor National Wildlife Refuge.

A total of 155 plants were installed in four plots within the Kalaeloa Unit in November and December 2014. Each planting plot is approximately 12 × 12 meters (m) (39.5 × 39.5 feet). In addition, four individual plants of round-



Plot 1 outplants on 6/21/2016

leaved chaff flower were planted outside of the Plots 1–4 in November 2014 and this area was designated Plot 5. As of June 21, 2016 there were 123 plants (77%) surviving. The success criteria specified in the HCP requiring survival of 120 outplanted individuals has been met. Other success specified in the HCP for Year 2 have been met. No natural regeneration of the

round-leaved chaff flower had been observed through FY 2016 however subsequently up to 55 seedlings have been documented. This is likely because of the weather, which was too hot and dry for sprouting seedlings. However, all outplants were flowering or fruiting from March 2016 through June 2016. Because of a seasonal drought during the reporting period, supplemental watering took place during the maintenance visit in June 2016. All maintenance activities were conducted under the direction of a horticulturalist.

Issues: 1) Although overall success has been acceptable, pest infestation on the plants has been a problem and treatment is ongoing.

Staff Recommendations: None

**SUMMARY OF SAFE HARBOR AGREEMENTS AND ASSOCIATED  
INCIDENTAL TAKE LICENSES**

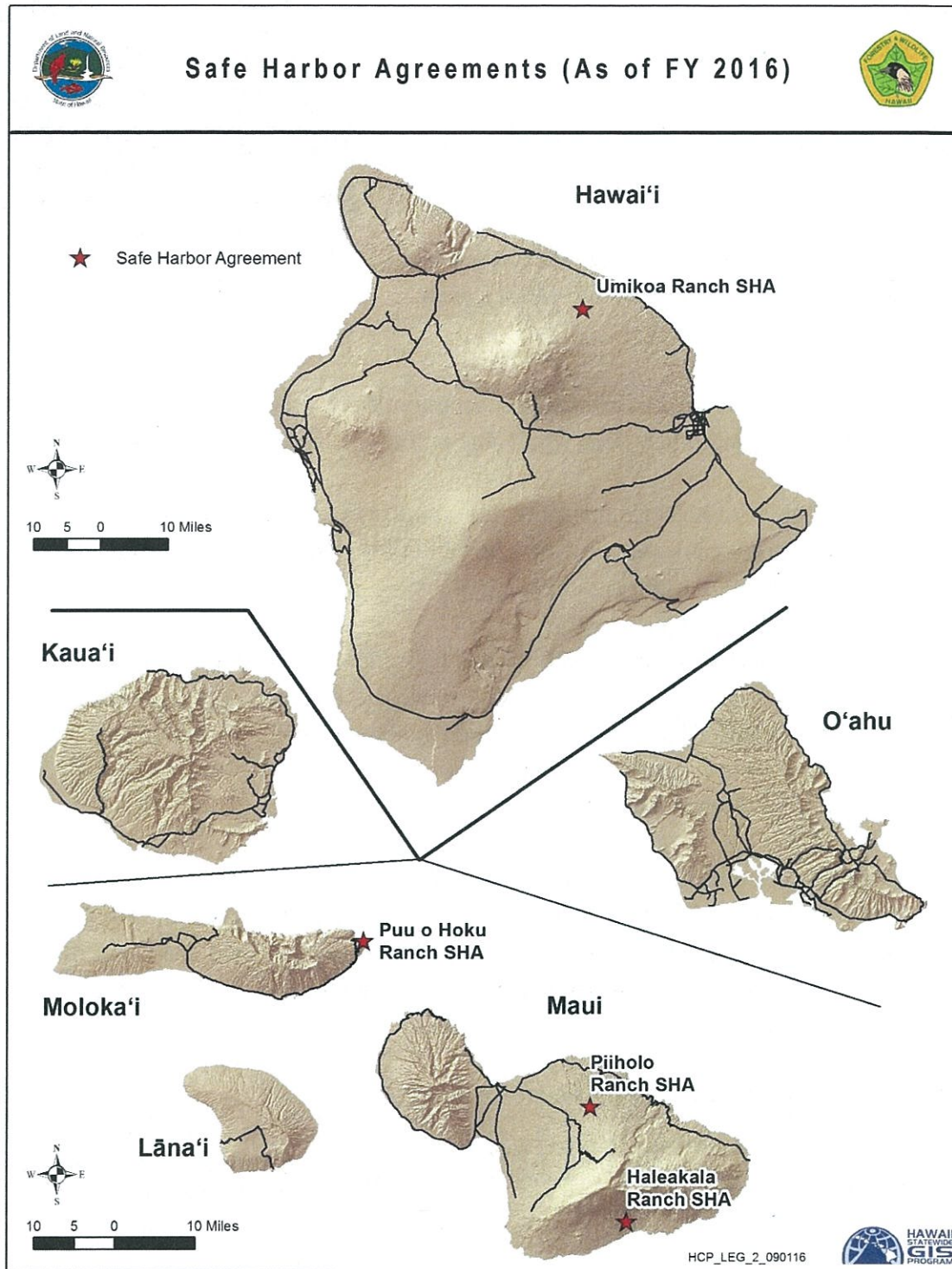


Figure 1. Location of Safe Harbor Agreements

***Safe Harbor Agreement for Pu‘u o Hōkū Ranch, Moloka‘i. Approved 2001.***

ITL Licensee: Pu‘u o Hōkū Ranch, Limited

Project: Reintroduce Nēnē (*Branta sandvicensis*) to Pu‘u o Hōkū Ranch, Moloka‘i.

ITL Duration: September 4, 2001 – September 3, 2008 (DOFAW is currently in discussion with Pu‘u o Hōkū Ranch to enter into a new agreement).

Take Authorization: Incidental take of Nēnē on lands owned or otherwise controlled by Pu‘u o Hōkū Ranch, Limited.



*Nēnē, official bird of the State of Hawai‘i, resting in the foreground.*

Baseline Condition: At the time of agreement execution, there was no wild Nēnē on Moloka‘i. Therefore the baseline condition is zero wild Nēnē on Pu‘u o Hōkū Ranch property.

Status of ITL: This SHA allows for the following: reintroduction of Nēnē on Pu‘u o Hōkū Ranch property, construct a release pen, provide habitat for Nēnē grazing and breeding, and control predators in the release pen and breeding areas.

Nēnē monitoring was performed on a weekly basis by Ranch and DOFAW personnel throughout the reporting period. Observations from surveys throughout the reporting period resulted in a total of 35 birds, as identified by their State and Federal bands, which is the estimated population size. A one day annual nene survey of eastern Molokai was conducted on July 23, 2015 which resulted in a total of 18 banded birds observed.

A total of 74 birds were translocated to the Pu‘u o Hōkū Ranch from 2002-2005. Table 1 provides survey data over the past 13 years for the original 74 birds translocated to the Pu‘u o Hōkū Ranch. The percentage of the original 74 birds that were re-sighted is a factor of survey effort and does not account for any unknown mortality or emigration from the ranch, and may not necessarily be a measure of translocation success.

Table 1. Observations of Nēnē translocated to Pu‘u o Hōkū Ranch

Year	No. of Birds Translocated	Total Birds Translocated	No. of Known Fatalities	No. of Birds Sighted	Percentage (%) of Translocated Birds Sighted (excluding known fatalities)
2016	0	74	0	2	3
2015	0	74	0	4	5
2014	0	74	0	6	9
2013	0	74	0	6	9

Year	No. of Birds Translocated	Total Birds Translocated	No. of Known Fatalities	No. of Birds Sighted	Percentage (%) of Translocated Birds Sighted (excluding known fatalities)
2012	0	74	0	6	9
2011	0	74	0	7	11
2010	0	74	0	8	13
2009	0	74	0	18	28
2008	0	74	1	33	52
2007	0	74	0	38	58
2006	0	74	5	29	45
2005	11	74	2	47	67
2004	8	63	1	42	69
2003	41	55	1	54	100
2002	14	11	0	14	100

During the August – April nesting season a total of four nests were recorded within the open-top release pen at Puu O Hoku Ranch and no additional nests were located on the ranch or adjacent areas. One nest was successful in producing three goslings and all were banded. Two nests were abandoned and one nest was depredated, with no renesting.

The 3 acres within the open-top release pen was maintained monthly. A total of approximately 63 acres was mowed during this reporting period. A total of 45 mongoose and five cats were removed around the open-top release pen at the Pu'u o Hōkū Ranch. No rats, mice or dogs were trapped this year.

Issues: 1) DOFAW is currently in discussion with Pu'u o Hōkū Ranch to enter into a new agreement. 2) The Nēnē population in FY 2016 was estimated as 35, down from over 70 the previous year.

Staff Recommendations: 1) Finalize an SHA. 2) Determine the reason for the decreased Nēnē population in this FY. Consider radio tagging one or more birds.

***Programmatic Safe Harbor Agreement for Nēnē on the Island of Moloka'i, Hawai'i. Approved 2003.***

ITL Licensee: DOFAW to issue Certificates of Inclusion under authority of §195D-22, HRS, to landowners signing Cooperative Agreements.

Project: Encourage private landowner management activities to benefit Nēnē and provide regulatory assurances if Nēnē occupy or breed on their property.

ITL Duration: April 7, 2003 – April 6, 2053

Take Authorization: Any Nēnē or Nēnē habitat above Baseline Conditions, as defined in respective landowner Cooperative Agreements.

Baseline Condition: To be set in each landowner Cooperative Agreement.

Status of ITL: During the reporting period and to date, there are no landowners enrolled under this SHA; discussions with interested landowners are ongoing.

Issues: There are no landowners as of yet under this SHA.

Staff Recommendations: Sign up participants in this SHA.

***Safe Harbor Agreement for the Introduction of Nēnē to Pi‘iholo Ranch, Maui.  
Approved 2004.***

ITL Licensee: Pi‘iholo Ranch, LLC

Project: Establish a Nēnē population on Pi‘iholo Ranch.

ITL Duration: September 21, 2004 – September 20, 2054

Take Authorization: Incidental take of Nēnē on lands owned or otherwise controlled by Pi‘iholo Ranch, LLC.



*Pi‘iholo Ranch on Maui.*

Baseline Condition: Following Nēnē reintroduction efforts on Maui that began at Haleakalā National Park in 1962, DOFAW began establishing a population in west Maui through a reintroduction program at Hana‘ula in 1995. However, prior to the development of the SHA, there had been no known Nēnē sightings at Pi‘iholo Ranch premises by DOFAW staff or Ranch personnel. Therefore the baseline condition was determined to be zero.

Status of ITL: Under this SHA, Pi‘iholo Ranch is maintaining or improving approximately 600 acres of Nēnē habitat for a period of 10 years. In cooperation with DOFAW, Pi‘iholo Ranch is undertaking the following activities: (1) construction of a Nēnē release pen; (2) predator control activities around Nēnē nesting and breeding sites; and (3) out-planting native plant species known to be Nēnē food sources.

Nēnē monitoring was performed on a weekly basis by Ranch and DOFAW personnel throughout the reporting period. Observational survey monitoring for Nēnē on Pi‘iholo Ranch throughout the reporting period resulted in a population estimate of 23 birds, including translocated birds.

Of the 48 birds translocated to the Ranch from 2005-2008 a total of 10 were sighted on Pi‘iholo Ranch during the reporting period.

Table 2 provides survey data over the past 10 years for the original 48 birds released to the Ranch. The percentage of the original 48 birds that were re-sighted is a factor of survey effort and does not account for any unknown mortality or emigration from the ranch, and may not necessarily be a measure of release success.

Table 2. Observations of Nēnē translocated to Pi‘iholo Ranch

<b>Year</b>	<b>No. of Birds Translocated</b>	<b>Total Birds Translocated</b>	<b>No. of Known Fatalities</b>	<b>No. of Birds Sighted</b>	<b>Percentage (%) of Translocated Birds Sighted (excluding known fatalities)</b>
2016	0	48	0	9	20
2015	0	48	0	10	23
2014	0	48	0	10	23
2013	0	48	0	11	25
2012	0	48	0	11	25
2011	0	48	1	16	36
2010	0	48	0	23	51
2009	0	48	1	26	58
2008	10	48	0	30	65
2007	25	38	2	26	72
2006	8	13	0	12	92
2005	5	5	0	5	100

During the breeding season seven were observed within the Pihiolo Ranch open-top release pen. One nest was successful this year and produced one fledgling. Four nests were abandoned. The other two nests in the open-top release pen had a total of four goslings hatch out but none survived to fledge; their deaths were attributed to avian predation. There were no renests this season.

At Pi‘iholo, a total of 9.75 acres were mowed annually both in and around the open-top release pen. Another 3.5 acres of grass was maintained by weedeating along the perimeter fence line of the open-top release pen. Predator control efforts resulted in a total of 19 mongoose and one rat trapped and removed around the open-top release pen at Pi‘iholo Ranch. No cats, dogs, or mice were trapped during the reporting period.

Issues: None

Staff Recommendations: None

***Safe Harbor Agreement for the Reintroduction of Nēnē to Haleakalā Ranch, Island of Maui. Approved 2012.***

ITL Licensee: Haleakalā Ranch Company

Project: Establish a Nēnē population on Haleakalā Ranch, Maui.

ITL Duration: May 22, 2012 – May 21, 2062

Take Authorization: Incidental take of Nēnē on lands owned or otherwise controlled by Haleakalā Ranch.

Baseline Condition: There had been no Nēnē sightings at Haleakalā Ranch by DOFAW staff or ranch personnel, prior to execution of the SHA. Therefore the baseline condition was determined to be zero.

Status of ITL: Haleakalā Ranch is creating or improving approximately 1,600 acres of Nēnē habitat for a period of 10 years. In cooperation with DOFAW, Haleakalā Ranch is undertaking the following activities: (1) construction of a Nēnē release pen; (2) predator control activities around Nēnē nesting and breeding sites; and (3) maintenance of access roads leading to the Nēnē release pen.

DOFAW conducted weekly monitoring during the reporting period at Haleakalā Ranch. A total of 53 birds were translocated to Haleakalā Ranch in the period 2011–2016. A total of 55 banded birds were sighted at Haleakala Ranch during the reporting period. On August 11, 2015, a Maui Island-wide Nene Survey was conducted, where twelve (12) banded Nēnē were counted at Haleakala Ranch. data obtained from yearly sightings produced an estimated population of 61 birds for Haleakala Ranch.

Table 3 provides survey data over the past 5 years for the original 53 birds translocated to the Ranch. Seven Nēnē (four adults and 3 goslings) from Kaua‘i and one injured bird from Moloka‘i were translocated to Haleakalā Ranch during this reporting period. The percentage of the original 53 birds that were re-sighted is a factor of survey effort and does not account for any unknown mortality or emigration from the ranch, and may not necessarily be a measure of release success.

A total of ten (10) other birds were captured in Central Maui and relocated to Haleakala Ranch pens.

Table 3. Observations of Nēnē translocated to Haleakala Ranch

Year	No. of Birds Translocated	Total Birds Translocated	No. of Known Fatalities	No. of Birds Sighted	Percentage (%) of Translocated Birds Sighted (excluding known fatalities)
2016	8	53	0	28	60
2015	8	45	1	25	64
2014	0	37	2	23	84
2013	7	37	1	31	91
2012	20	30	2	30	100
2011	10	10	0	10	100

Six nests were found at Haleakala Ranch, five inside the open-top release pen and one on the ranch property outside the open-top release pen. Once the nest outside of the pen hatched, the family was moved into the open-top release pen. Of these six nests, four were successful resulting in the eight goslings fledged, all of which were banded. Additionally, a Central Maui family was relocated to Haleakala Ranch pen from which three goslings successfully fledged. This resulted in a total of eleven fledglings successfully fledged from Haleakala Ranch open-top release pen.

Satellite transmitters are being placed on selected Nēnē from Kaua‘i prior to release at Haleakalā Ranch. The satellite transmitters will be used to track Nēnē movement and habitat use on Maui to better inform management approaches. Currently, three Kaua‘i translocated birds have active transmitters and no new satellite telemeters were placed on birds this year.

The two-acre pen was mowed monthly and an additional 20.5 acres around the open-top release pen were mowed this reporting period. An additional 7.5 acres were maintained along the perimeter fence lines. Predator control efforts resulted in a total of 33 mongoose and 6 rats, removed around the open-top release pen. No cats, dogs, or mice were trapped during the reporting period.

Issues: 1) An ITL exists for this site but there is not a completed SHA. The draft is currently in review by FWS.

Staff Recommendations: Finalize the SHA as soon as possible.

***Safe Harbor Agreement for the Koloa Maoli or Hawaiian Duck (Anas wyvilliana) and the Nēnē or Hawaiian Goose (Branta sandvicensis) on Umikoa Ranch, Island of Hawai‘i. Approved 2001.***

ITL Licensee: Umikoa Ranch

Project: Establish a Koloa and Nēnē population on privately owned lands of Umikoa Ranch in the Hamakua District of Hawai‘i Island.

ITL Duration: December 5, 2001 – December 4, 2100

Take Authorization: Incidental take of Nēnē and Koloa, including their progeny, on lands owned or otherwise controlled by Umikoa Ranch, provided that such take is above established baseline conditions.



*Koloa Maoli or Hawaiian Duck, endemic to the Hawaiian Islands.*

Baseline Condition: The Baseline Conditions for Koloa and Nēnē were determined from monthly biological surveys conducted between January and October 2000. During this time there were five existing ponds ranging from 0.12 to 0.30 acres, providing approximately one acre of open water habitat, in addition to 5 acres of adjacent upland habitat. Surveys indicated that the Umikoa wetland area was frequented by a single pair of wild Koloa. Therefore, the baseline for Koloa was determined to be two individuals, 1 acre of open water habitat, and 5 acres of adjacent upland habitat. The baseline for Nēnē was determined to be zero.

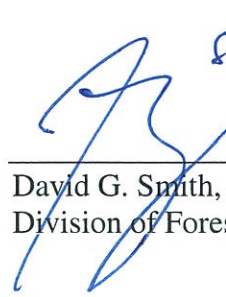
Status of ITL: Umikoa Ranch is maintaining fencing around a minimum of ten ponds, consisting primarily of open water, and surrounding riparian and associated upland habitat totaling a minimum of 50 acres.

No Koloa or Nēnē were reported using the ponds in the reporting period according to the landowner’s manager of the property. The fencing and maintenance of the ponds could support Koloa and Nēnē habitat. No non-native waterfowl were reported using the ponds during the reporting period. Fencing around four of the larger ponds was redone during the reporting period. However, during an October 2016 site visit breaks in fences around 4 of the ponds were observed. Predator traps for cats and mongoose are maintained around the cabins in the lower portion of the property. Mongoose are being caught but no cats have been caught within the past six months. Stray dogs are also controlled.

Issues: 1) Breaks in fences required under the SHA surrounding 4 ponds were observed during an October 2016 site visit.

Staff Recommendations: 1) Meet with the land manager to discuss repair of the fences and discuss the willingness of the land owner and land manager to maintain all the conditions of the SHA.

Respectfully Submitted,

 *for DGS*

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David G. Smith, Administrator  
Division of Forestry and Wildlife

